ABBREVIATED INSTRUCTIONS FOR USING THE AUWE DESIGNED ELECTRONIC SLIDE RULE

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Preliminary Note:- In the solutions given below, the values for Reactance and Resonant Frequency follow the rule that those values labelled 'Index α' shall be used when the index line marked 'Index α' is used, and those values labelled 'Index β' shall be used when the index line marked 'Index β' is used.

In each of the following manipulations, except methods 1 and 6, the first move in the sequence is to line up the cursor with the known value of resonant frequency, or reactance frequency as the case may be.

Front side of Slide Rule

1. To find RESONANT FREQUENCY (L and C given)

   a. Set cursor to the 'C' value on Scale B.
   b. Move slide to line up the 'L' value on Scale C with cursor.
   c. Move cursor to line up with the index line on slide.
   d. Read off, through cursor, the value of 'f_r' on Scale A.

2. To find INDUCTANCE (C and f_r given)

   a. Set cursor to the 'f_r' value on Scale A.
   b. Move slide until the index line lines up with cursor.
   c. Move cursor to line up with the 'C' value on Scale B.
   d. Read off, through cursor, the value of 'L' on Scale C.

3. To find CAPACITANCE (L and f_r given)

   a. Set cursor to the 'f_r' value on Scale A.
   b. Move slide until the index line lines up with cursor.
   c. Move cursor to line up with the 'L' value on scale C.
   d. Read off, through cursor, the value of 'C' on Scale B.

4. To find REACTANCE (L and f_x given)

   a. Set cursor to the 'f_x' value on Scale D.
   b. Move slide until the 'L' value on Scale C lines up with cursor.
   c. Move cursor to line up with the index line on slide.
   d. Read off, through cursor the reactance value on Scale E.

Reverse side of Slide Rule

5. To find REACTANCE (C and f_x given)

   a. Set cursor to the 'f_x' value on Scale K.
   b. Move slide until the 'C' value on Scale J lines up with cursor
   c. Move cursor to line up with the index line on slide.
   d. Read off, through cursor, the reactance value on Scale L.

To arrive at more accurate solutions for L, C and f_r.

The Scales F, G and H, are used in these determinations. Because the readings on these scales are not expressed in actual units, ie reading 2, for instance, may represent the value of 0.002, 0.2, 20, 2000 etc., it is, in consequence, possible to obtain two answers, the correct one of which is ascertained from an initial solution obtained from method 1, 2 or 3 as the case may be. The following methods are then recommended:-

6. To find RESONANT FREQUENCY. (L and C given)

   a. Set cursor to the solved solution of 'f_r' on Scale F.
      (eg the reading for 8.1 MHz would be 81)
   b. Move slide to line up cursor with either index line.
   c. Move cursor to the reading representing the known 'C' value.
   d. Move slide to line up with cursor the reading representing the
      known 'L' value.
   e. Move cursor to line up with index line.
   f. Read off, through cursor, the reading on Scale F and express
      in correct units as required, as determined by the initial
      calculation.

7. To find INDUCTANCE.

   a. Set cursor to the reading representing the 'f_r' value on
      Scale F.
   b. Move slide until index line lines up with cursor.
   c. Move cursor to line up with the reading representing the 'C'
      value on Scale H.
   d. Read off, through cursor, the reading on Scale H and express
      in correct units, as determined by the initial calculation.

8. To find CAPACITANCE. (L and f_r given)

   a. Set cursor to the reading on Scale F representing the 'f_r' value.
   b. Move slide until the index line lines up with cursor.
   c. Move cursor to line up with the reading representing the 'L'
      value on Scale H.
   d. Read off, through cursor, the reading representing the 'C' value
      on Scale G and express in correct units, as determined by the
      initial calculations.

9. A limited number of rules are available on loan from EE1 Section.

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